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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/826,419

04/16/2004

Joseph Ferrara

16-605

9852

7590

09/20/2006

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EXAMINER

GREENHUT, CHARLES N

ART UNIT

PAPER NUMBER

3652

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/826,419

**Applicant(s)**

FERRARA, JOSEPH

**Examiner**

Charles N. Greenhut

**Art Unit**

3652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/12/06</u> .   | 6) <input type="checkbox"/> Other: _____                          |

### **I. Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claim(s) 1-3 is/are rejected under 35 U.S.C. 102(b) as being anticipated by ONO (US 5,405,230 A).

1.1. With respect to claims 1-3, ONO discloses a first and second load lock (31)/(32) in a housing, having access openings (G1) facing the higher pressure region at different angles, allowing access from two different directions, a support (L1-25), valve (E) processing station (1), robot (12a), and aligner (Fig. 14A-15B).

### **II. Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim(s) 4-5 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over ONO in view of MITCHELL (US 6,350,097 B1).

1.1. With respect to claim 4-5, ONO fails to teach the load locks spaced vertically.

MITCHELL'097 teaches the load locks spaced vertically (3)/(4) and the robot having two end effectors (22)/(29) that can be raised and lowered (Col. 5 Li. 23-26). It would

have been obvious to one of ordinary skill in the art to modify ONO with the multiple arms of MITCHELL'097 in order to increase throughput.

2. Claim(s) 6-12 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over FUSE (US 5,217,501 A) in view of MITCHELL'097 and further in view of SOEJIMA (US 6,024,800 A).

2.1. With respect to claim 6, FUSE (fig. 2) discloses an enclosure (42) defining a low pressure region a load lock (44) which includes two access openings (55)/(56) confronting the atmospheric region at different angles, and a third access opening (53)/(54) to lower pressure, first robot (60) an other robot (62) aligned with an opening (55)/(56). FUSE fails to disclose two adjacent load locks, and multiple other robots. MITCHELL'097 teaches two adjacent load locks (3)/(4). It would have been obvious to one of ordinary skill in the art to modify FUSE with additional adjacent load locks as taught by MITCHELL'097 in order to increase system throughput. SOEJIMA teaches multiple other robots (40)/(50). It would have been obvious to one of ordinary skill in the art to modify FUSE with the multiple other robots of SOEJIMA in order to increase system throughput.

2.2. With respect to claims 7-12 FUSE additionally teaches the opening allowing insertion along different paths and moving in an arc. MITCHELL'097 teaches the load locks spaced vertically (3)/(4) and the robot having two end effectors (22)/(29) mounted to a carriage (Fig. 1) that can be raised and lowered (Col. 5 Li. 23-26) perpendicular (23) to wafers (12). It would have been obvious to one of ordinary skill

in the art to modify FUSE with the multiple arms of MITCHELL'097 in order to increase throughput.

3. Claim(s) 13-18, 20, and 22-25 is/are rejected under 35 U.S.C. 102(b) as being unpatentable over MITCHELL'097 in view of ONO.

3.1. With respect to claims 13-15, 20, 22-24 MITCHELL'097 discloses providing a low pressure robot having two end effectors (22)/(29), aligning a wafer (40), moving an unprocessed wafer to a first load lock (Col. 6 Li. 18-19), lowering the pressure (41), removing the unprocessed wafer (42), with one end effector (29), and moving it to a processing station having a chuck (45) that attracts and reorients the wafer (46)/(Col. 6 Li. 39-42), while placing a processed wafer with a second end effector (22) into one load lock (43), raising the pressure (52), and inserting an additional wafer (Col. 6 Li 65 et. seq.) before removing the processed wafer (Col. 6 Li. 59-60) from the same load-lock into which it was inserted (Col. 6 Li. 52-53) wherein alternate wafers are placed in alternate load locks (Fig. 5). MITCHELL'097 fails to teach the openings facing the atmosphere at different angles for access from different directions. ONO teaches openings (G1) facing the atmosphere at different angles to allow access from different directions. It would have been obvious to one of ordinary skill in the art to modify MITCHELL'097 with the additional angled opening of ONO in order to increase throughput of the system.

3.2. With respect to claim 16-18, MITCHELL'097 additionally discloses one load lock (3) above the second load lock (4), moving the collinearly mounted (Fig. 4) end effectors up and down (Col. 5 Li. 24-26) via a drive motor (39).

3.3. With respect to claim 25, MITCHELL'097 discloses a first and second load lock (3)/(4) in a housing, low pressure robot having two end effectors (22)/(29), a second in-air robot (16), pump (Fig. 5), and inherently discloses a controller for causing the movements of the robots. MITCHELL'097 fails to teach the openings facing the atmosphere at different angles for access from different directions. ONO teaches openings (G1) facing the atmosphere at different angles to allow access from different directions. It would have been obvious to one of ordinary skill in the art to modify MITCHELL'097 with the additional angled opening of ONO in order to increase throughput of the system.

4. Claim(s) 19 and 21 is/are rejected under 35 U.S.C. 102(b) as being unpatentable over MITCHELL'097 in view of ONO and further in view of SOEJIMA.

4.1. With respect to claim 19 and 21, MITCHELL'097 additionally discloses the first and second load locks have access openings at an angle with respect to each other and placing an unprocessed wafer on and removing it from an aligner. MITCHELL'097 fails to teach multiple in air robots. SOEJIMA teaches multiple in air robots. It would have been obvious to one of ordinary skill in the art to modify MITCHELL'097 with the multiple robots of SOEJIMA in order to increase throughput

### **III. Response to Applicant's Arguments**

Applicant's arguments entered 8/23/06 have been fully considered.

1. Applicant argues that U.S. Patent 7,010,388 to MITCHELL should be disqualified as prior art under 35 USC 103(a) because, at the time the claimed invention was made, the subject matter

of MITCHELL '388 and the present invention were commonly owned. This argument is persuasive. MITCHELL '388 has therefore been removed as a reference.

2. Applicant argues that ONO fails to disclose confronting the atmospheric region at different angles to allow access from different directions. This argument is not persuasive. ONO discloses confronting the atmospheric region at different angles (e.g., 160° & 200°) to allow access from different directions.

#### **IV. Conclusion**


1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
2. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.
3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.



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4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles N. Greenhut whose telephone number is (571) 272-1517. The examiner can normally be reached on 7:30am - 4:00pm EST.
5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen D. Lillis can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.
6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CG



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